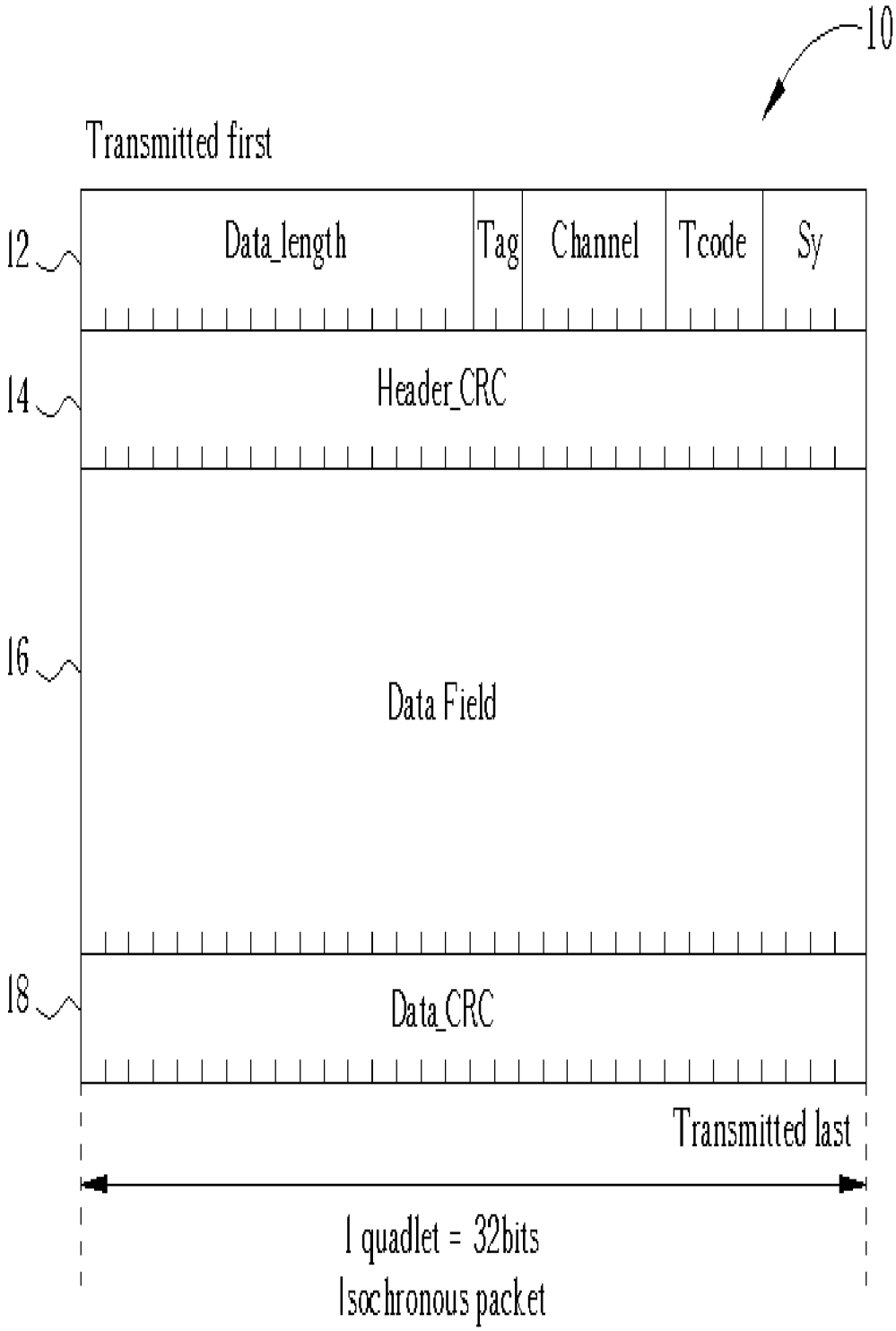


Fig. 1 Prior art

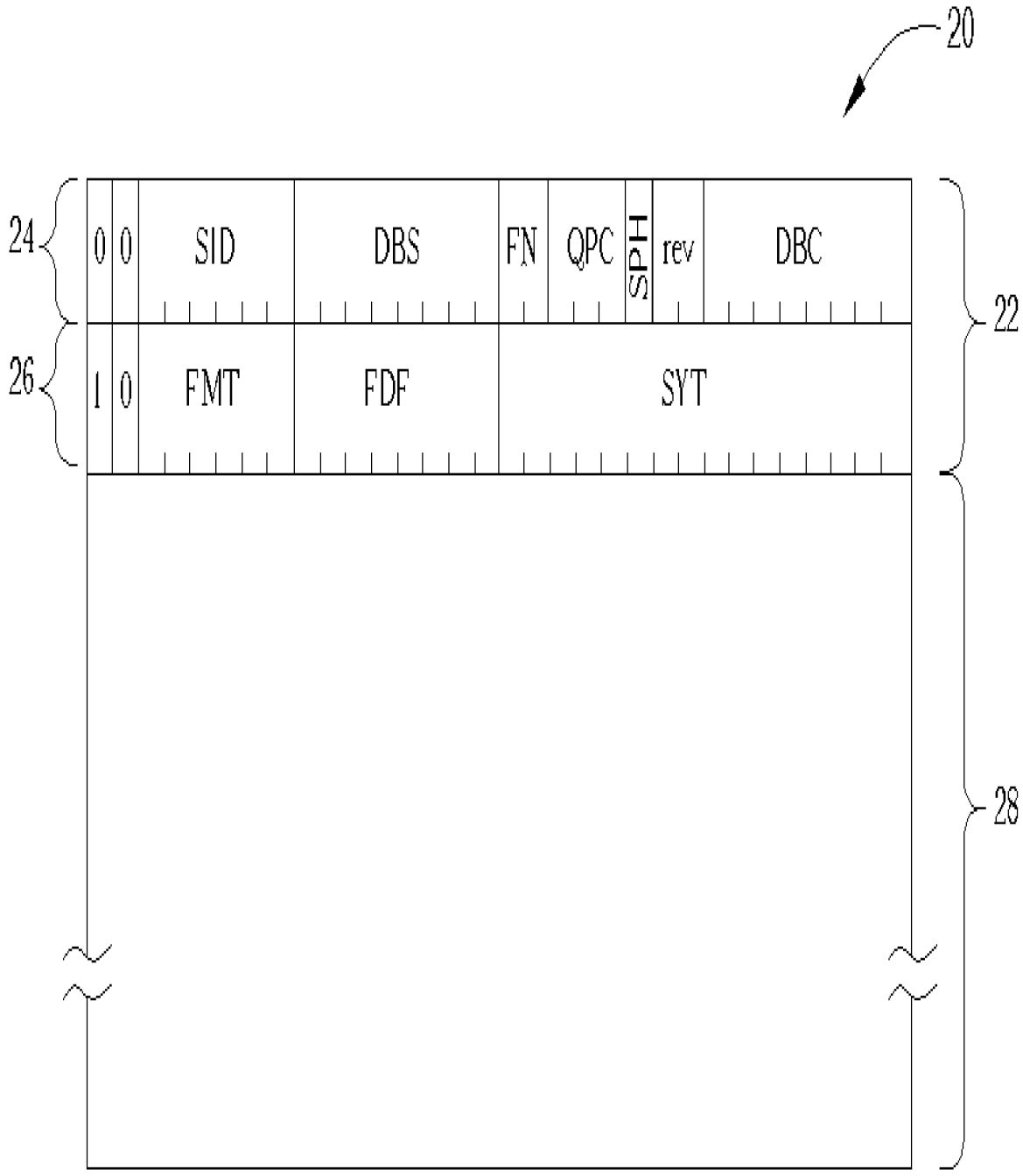


Fig. 2 Prior art

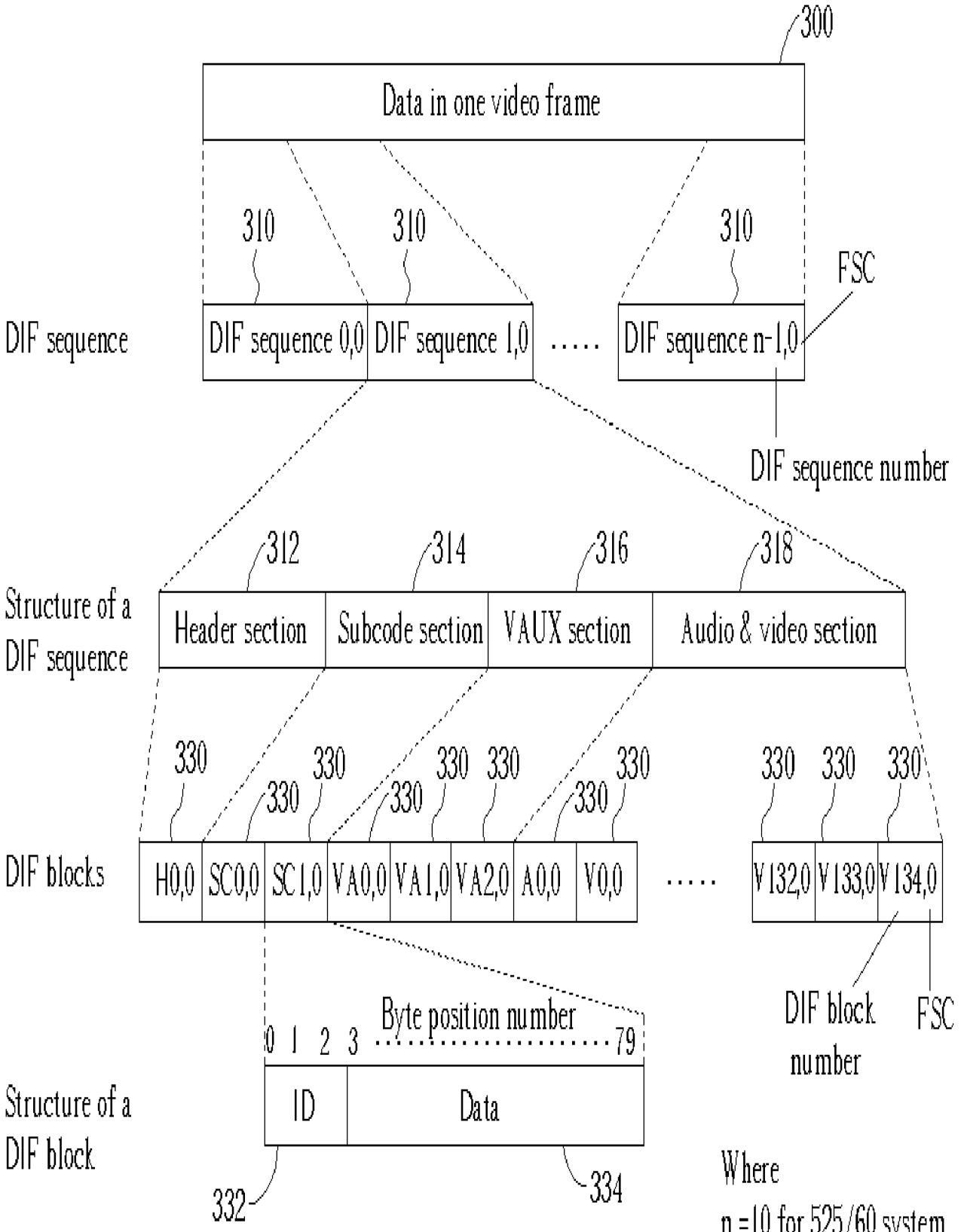
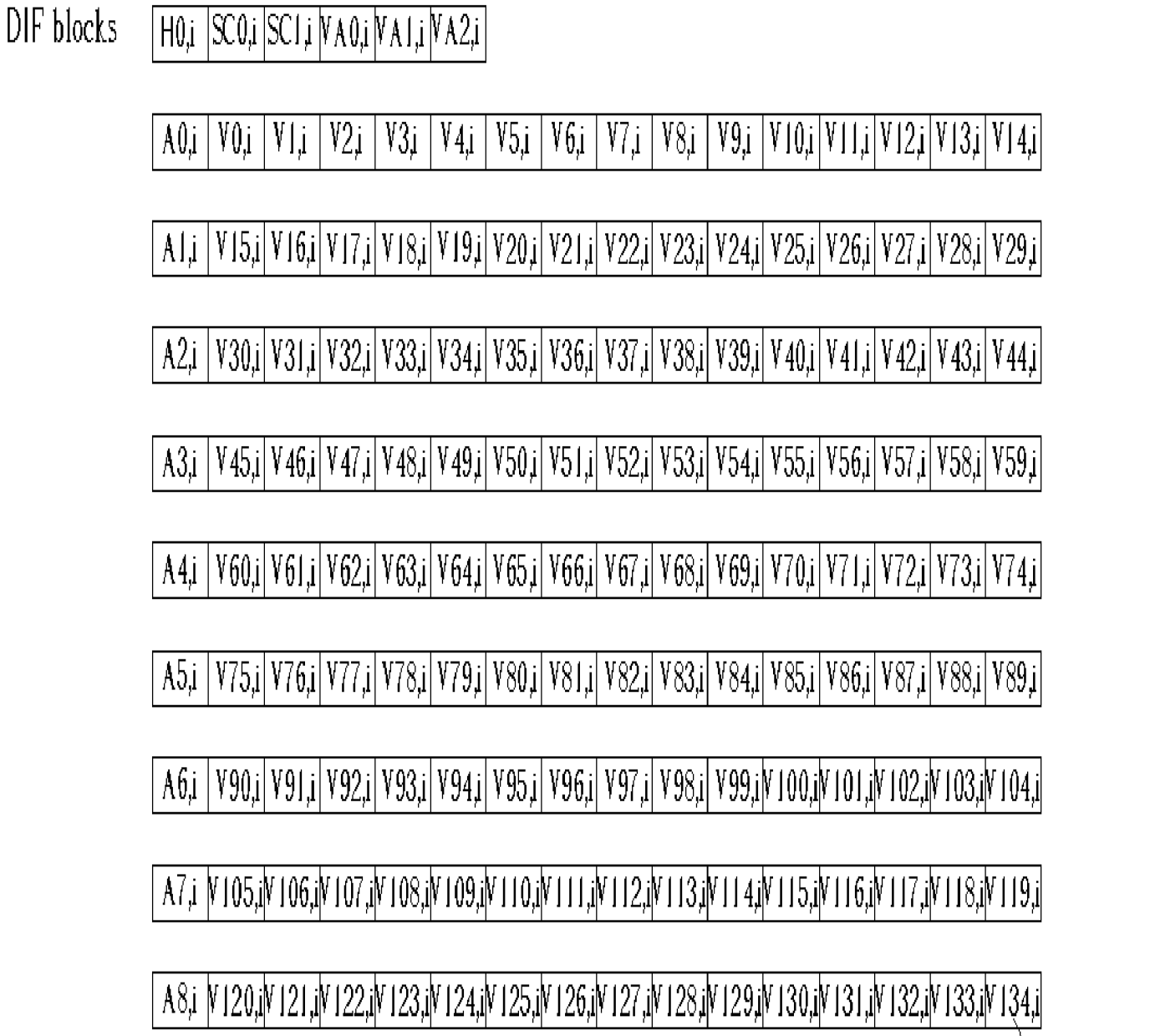


Fig. 3 Prior art



Where

i :FSC

i=0 for 25 Mb/s structure

i=0,1 for 50 Mb/s structure

H0,i :DIF block in header section

SC0,i to SC1,i :DIF blocks in subcode section

VA0,i to VA2,i :DIF blocks in VAUX section

A0,i to A8,i :DIF blocks in audio section

V0,i to V134,i :DIF blocks in video section

Fig. 4 Prior art

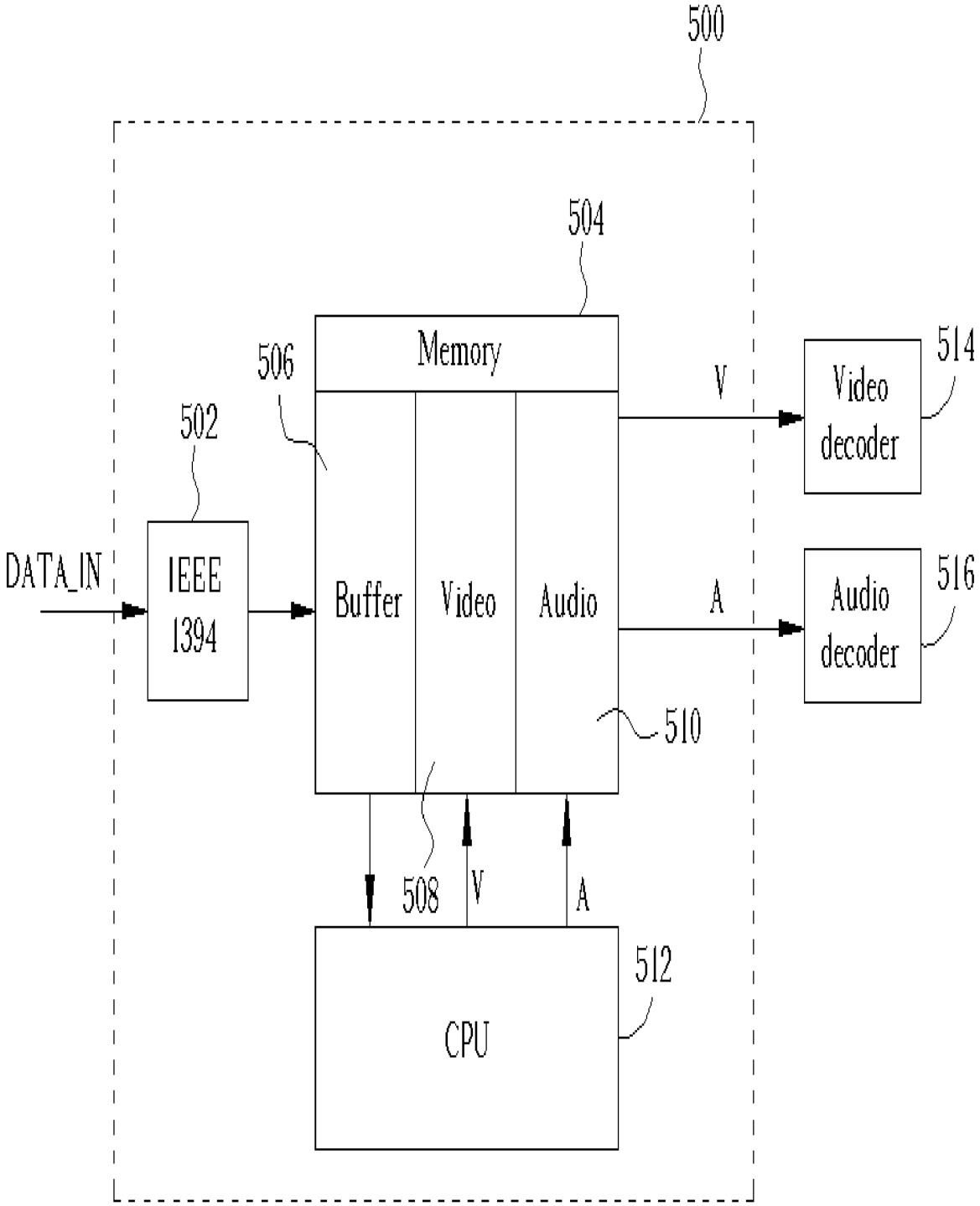


Fig. 5 Prior art

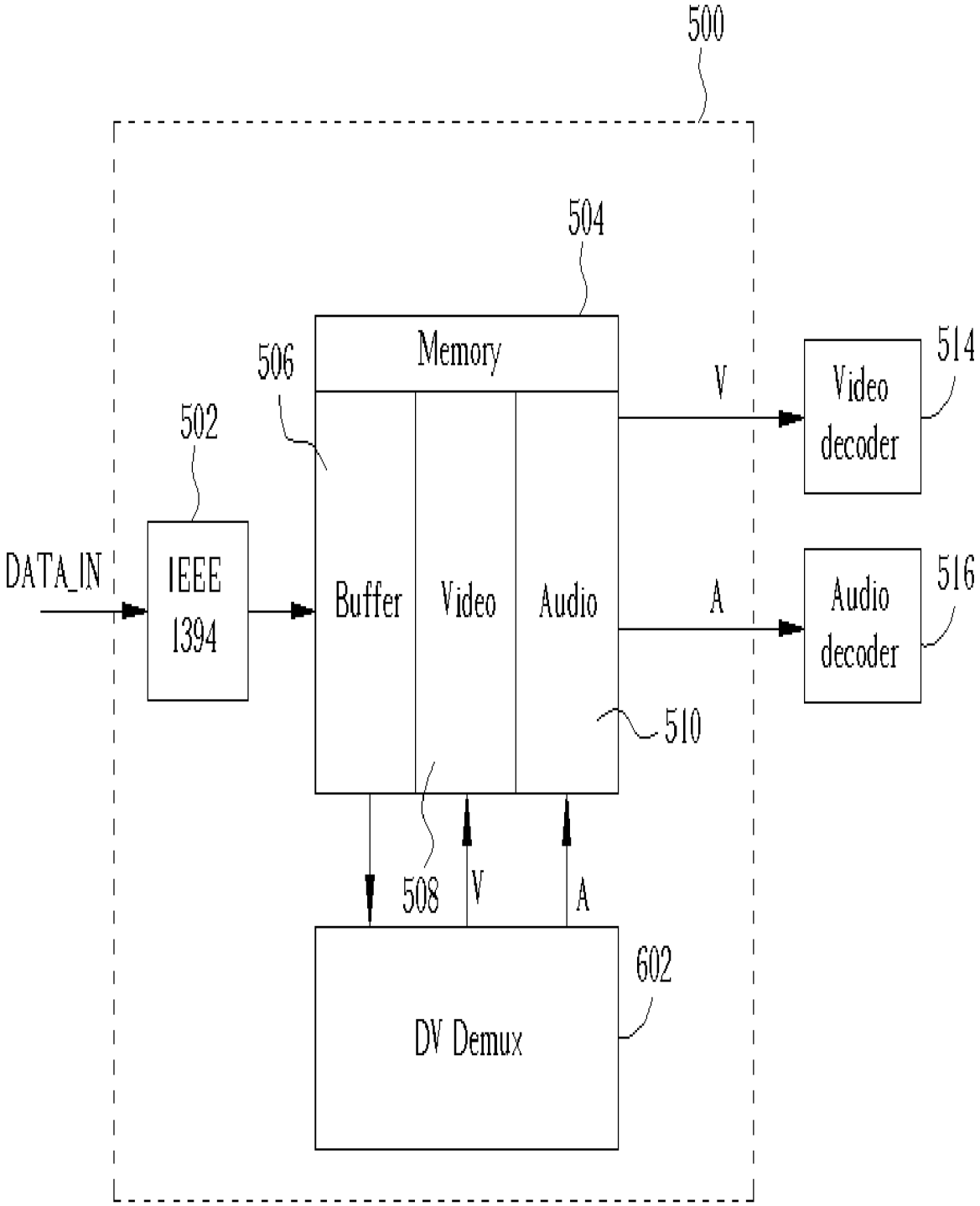


Fig. 6 Prior art

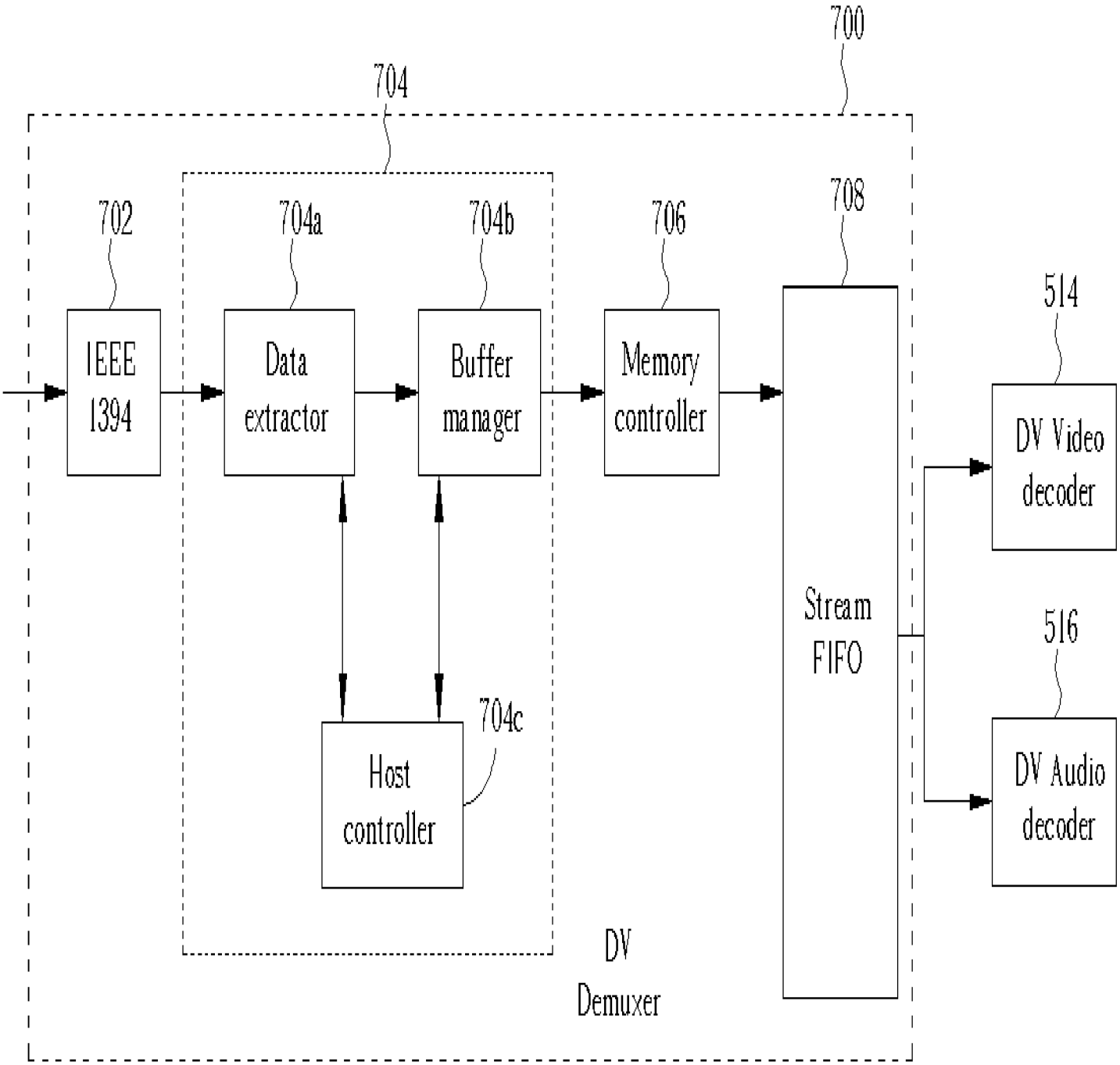

700
704
702
704a
704b
706
708
514
IEEE 1394
Data extractor
Buffer manager
Memory controller
Stream FIFO
DV Video decoder
516
DV Audio decoder
704c
Host controller
DV Demuxer

Fig. 7

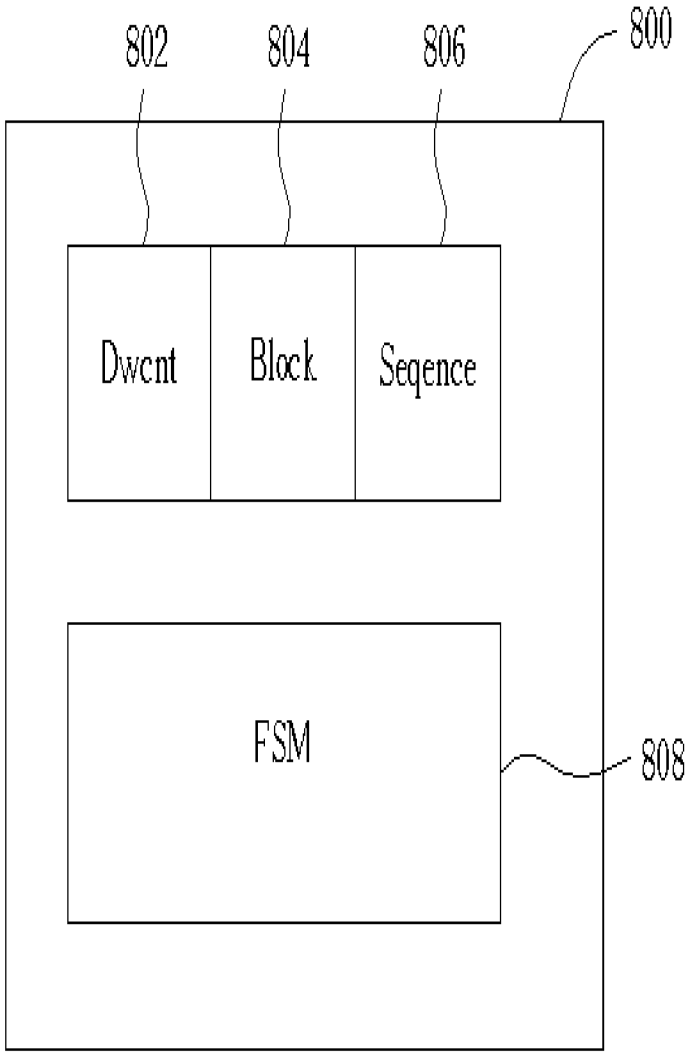


Fig. 8

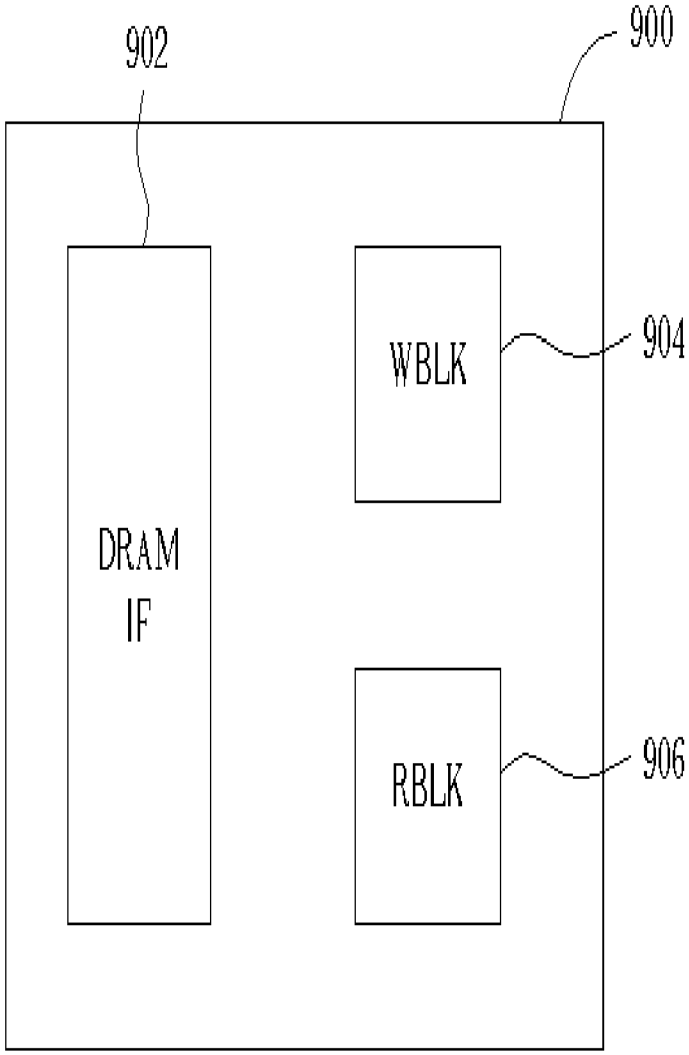


Fig. 9

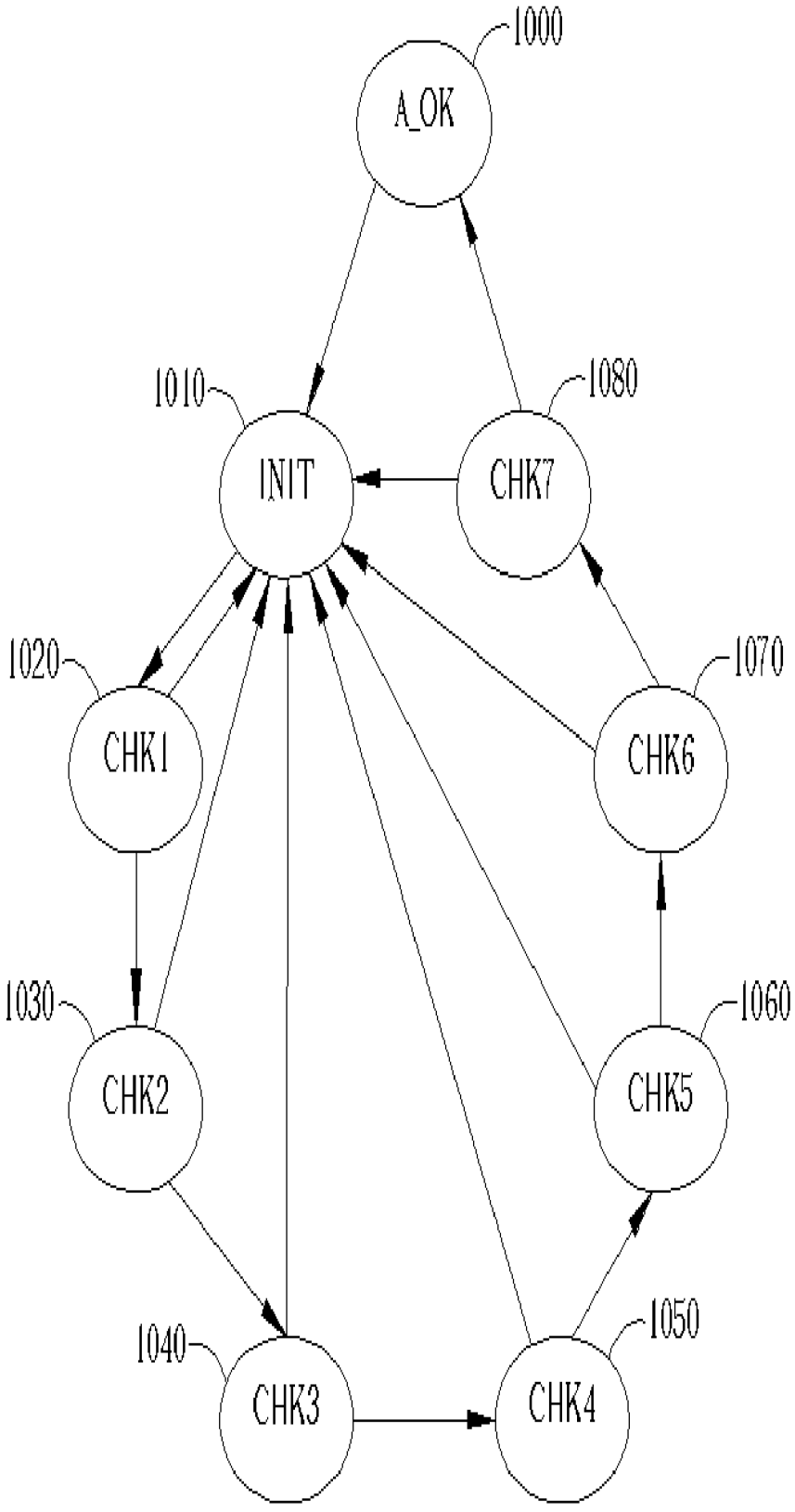

1000
A_OK
1010
INIT
1080
CHK7
1020
CHK1
1070
CHK6
1030
CHK2
1060
CHK5
1040
CHK3
1050
CHK4

Fig. 10

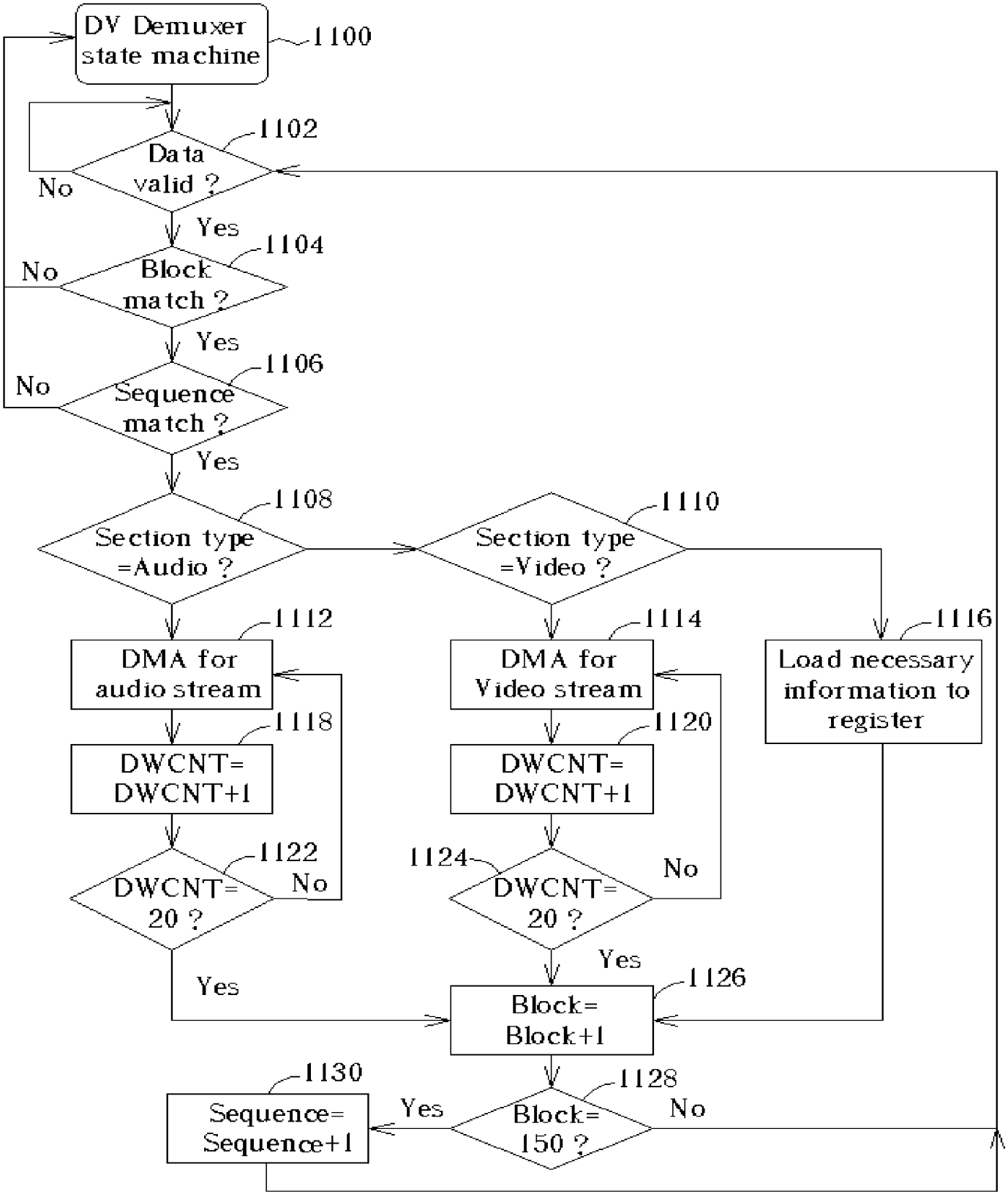

DV Demuxer state machine
1100
Data valid ?
1102
No
Yes
Block match ?
1104
No
Yes
Sequence match ?
1106
No
Yes
Section type =Audio ?
1108
Section type =Video ?
1110
DMA for audio stream
1112
DMA for Video stream
1114
Load necessary information to register
1116
DWCNT= DWCNT+1
1118
DWCNT= DWCNT+1
1120
DWCNT= 20 ?
1122
No
Yes
DWCNT= 20 ?
1124
No
Yes
Block= Block+1
1126
Block= 150 ?
1128
Yes
No
Sequence= Sequence+1
1130

Fig. 11

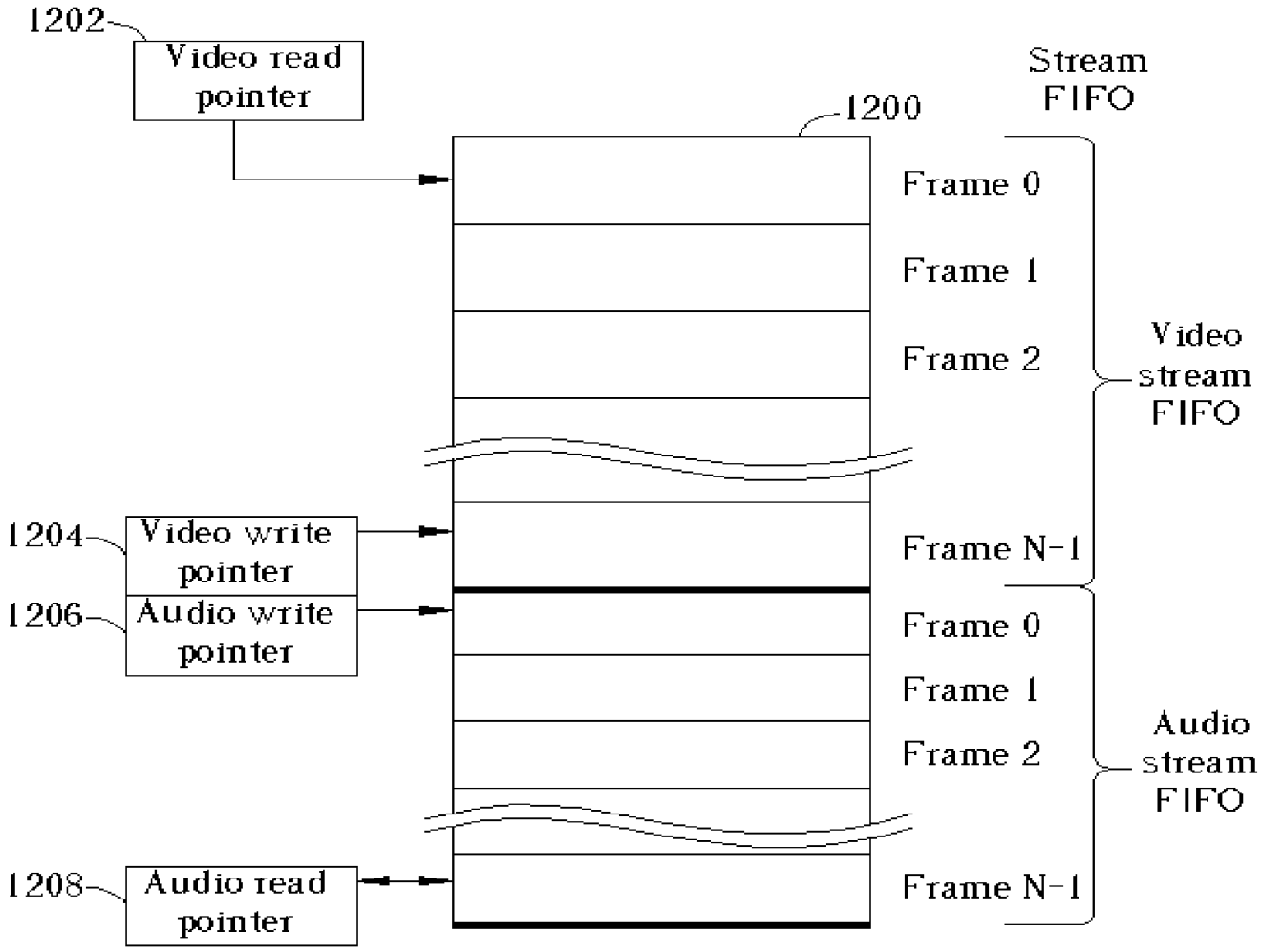

1202
Video read pointer
1200
Stream FIFO
Frame 0
Frame 1
Frame 2
Video stream FIFO
Frame N-1
1204
Video write pointer
1206
Audio write pointer
Frame 0
Frame 1
Frame 2
Audio stream FIFO
1208
Audio read pointer
Frame N-1

Fig. 12

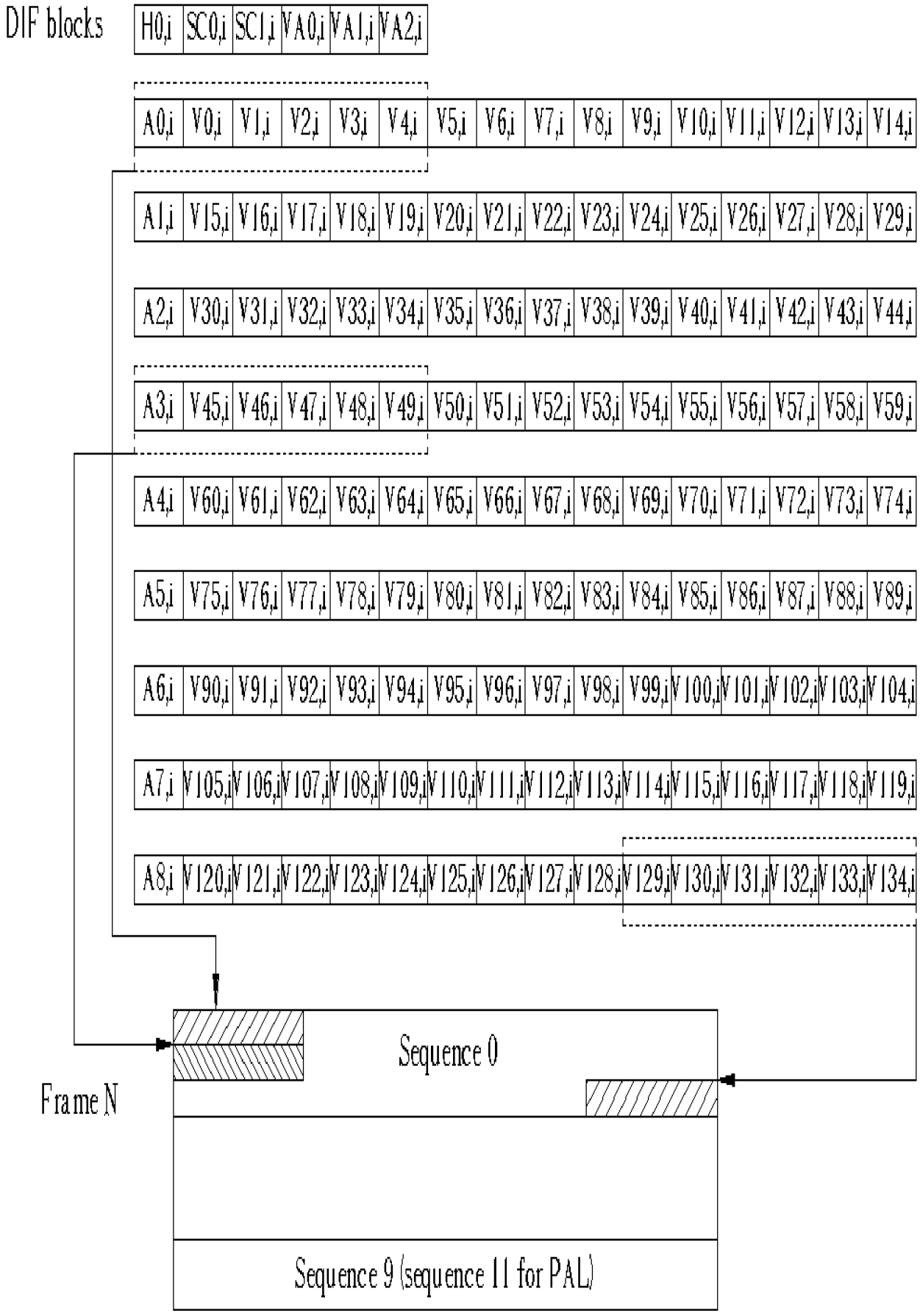

DIF blocks
H0,i SC0,i SC1,i VA0,i VA1,i VA2,i
A0,i V0,i V1,i V2,i V3,i V4,i V5,i V6,i V7,i V8,i V9,i V10,i V11,i V12,i V13,i V14,i
A1,i V15,i V16,i V17,i V18,i V19,i V20,i V21,i V22,i V23,i V24,i V25,i V26,i V27,i V28,i V29,i
A2,i V30,i V31,i V32,i V33,i V34,i V35,i V36,i V37,i V38,i V39,i V40,i V41,i V42,i V43,i V44,i
A3,i V45,i V46,i V47,i V48,i V49,i V50,i V51,i V52,i V53,i V54,i V55,i V56,i V57,i V58,i V59,i
A4,i V60,i V61,i V62,i V63,i V64,i V65,i V66,i V67,i V68,i V69,i V70,i V71,i V72,i V73,i V74,i
A5,i V75,i V76,i V77,i V78,i V79,i V80,i V81,i V82,i V83,i V84,i V85,i V86,i V87,i V88,i V89,i
A6,i V90,i V91,i V92,i V93,i V94,i V95,i V96,i V97,i V98,i V99,i V100,i V101,i V102,i V103,i V104,i
A7,i V105,i V106,i V107,i V108,i V109,i V110,i V111,i V112,i V113,i V114,i V115,i V116,i V117,i V118,i V119,i
A8,i V120,i V121,i V122,i V123,i V124,i V125,i V126,i V127,i V128,i V129,i V130,i V131,i V132,i V133,i V134,i
Sequence 0
Frame N
Sequence 9 (sequence 11 for PAL)

Fig. 13

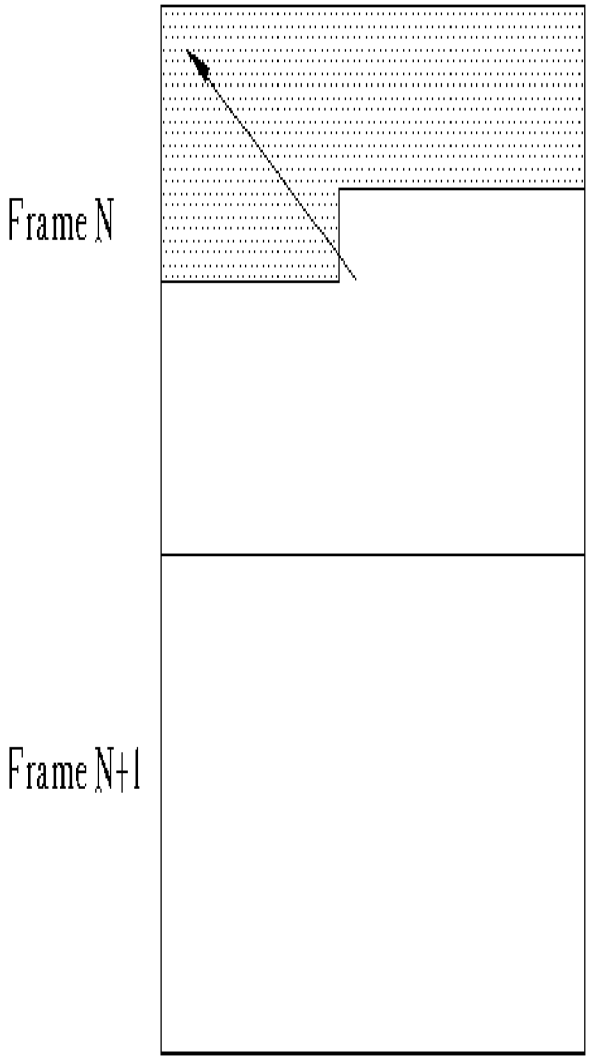


Fig. 14

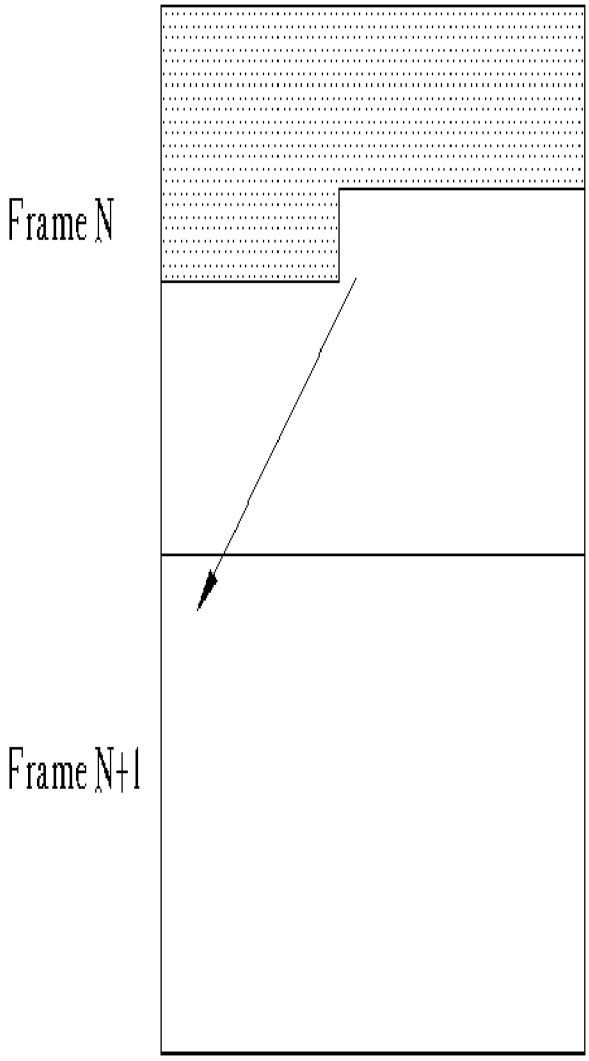


Fig. 15